

ABSTRACT OF THE DISCLOSURE

Die of high aspect ratio formed in a hard wafer substrate are sawed out without requiring tape, obtaining high die yields. Preliminary to sawing the semiconductor die (3) from a sapphire wafer (2), the wafer is joined (20) to a silicon carrier substrate (6) by a thermoplastic layer (4) forming a unitary sandwich-like assembly. Sawing the die from the wafer follows. The thermoplastic is removed, and the die may be removed individually (50) from the silicon carrier substrate. Thermoplastic produces a bond that holds the die in place against the shear force exerted by the saw and by the stream of coolant (30).